House Select Committee on North Carolina River Quality

Thursday, September 28, 2017 at 9:00 AM
Room 643 of the Legislative Office Building

MINUTES

The House Select Committee on North Carolina River Quality met at 9:00 AM on September 28, 2017 in Room 643 of the Legislative Office Building. Representatives Davis, Grange, Iler, Co-Chairs, and members Brisson, Dixon, Hall, Harrison, McElraft, Steinburg and Stone attended. The following staff members were also in attendance: Jeff Hudson, Jennifer McGinnis, Chris Saunders, Mariah Matheson and Judy Lowe, Committee Clerk. **Visitor's Registration Sheets (attachment 1)** are filed as a record to the minutes.

Representative Ted Davis, Jr., Senior Chairman, presided. He welcomed the staff, visitors and Sergeants at Arms, Jonas Cherry, Marvin Lee, Dean Marshbourne, and Thomas Terry.

He then asked the Co-Chairs if they had any remarks. Representative Grange was happy to see so many present that are willing to help provide information so that something like this does not happen again. She wanted to make sure that what is accomplished in this Committee is going to be applied throughout the entire state. She noted that the Committee had a very ambitious agenda and she was excited that there was so much participation.

Representative Iler appreciated all those who were in attendance and noted that the Committee needed true information more than anything else and he was grateful for the scientific folks present as well as others who have an interest. He stated it is important to know what is going into the water before it goes in it.

Chairman Davis reviewed the purpose of the Committee and thanked Speaker Tim Moore for establishing it.

The first item on the agenda was an overview and PowerPoint presentation on the regulatory history of the Chemours Fayetteville Works facility given by Ms. Sheila Holman, Assistant Secretary for Environment, Department of Environmental Quality (DEQ) and are **Attachments 2a and b.** Her written remarks are also included in **Attachment 3**.

Ms. Holman began with Regulatory Program Overviews. The Toxic Substances Control Act (TSCA) is implemented by the United States Environmental Protection Agency (U.S. EPA), which oversees the approval of chemical manufacturing in the United States. States can seek Confidential Business Information (CBI) clearance to review information directly from the U.S. EPA, or a company can give notice to U.S. EPA that they consent to a state having access to CBI material. The federal Clean Water Act (CWA) is implemented by DEQ with oversight from U.S. EPA. The federal Safe Drinking Water Act (SDWA) is also implemented by the state and ensures that public water supplies are protective of human health and the environment. The Environmental Management Commission (EMC) establishes rules for surface water and groundwater standards in North Carolina.

Cape Fear River. The recent history of the Cape Fear River data shows that the U.S. EPA used a stepwise prioritization process to identify potential Unregulated Contaminant Monitoring Rule (UCMR) 3 contaminants. An agency and state working group first reviewed the third Contaminant Candidate List (CCL 3) as well as the contaminants considered in the development of CCL 3. The final CCL 3 was comprised of contaminants that were selected through a data-driven process that considered adverse health effects and occurrence. They used CCL 3, along with additional sources of information about other emerging contaminants of potential concern, to establish an initial list of potential UCMR 3 contaminants. 1,4-dioxane, a probable human carcinogen, is found in a variety of products including makeup, paint and soaps and is a byproduct of making/recycling Polyethylene Terephthalate (PET) plastic and polyester products. Results from the study's first year indicated four primary areas of elevated 1,4-dioxane in the upper portion of the Cape Fear River basin. Three of the areas were located immediately downstream of wastewater treatment plants, indicating that discharges from these facilities may be conduits for 1,4-dioxane. The fourth was located along a smaller stream and potential local sources will be explored as the study continues. Results from the second year of the study demonstrated reductions in 1,4-dioxane concentration at almost all monitoring stations. Division of Water Resources (DWR) began another 18 month monitoring of 1,4-dioxane at locations in the Cape Fear River basin, as well as the Neuse and Yadkin river basins, with the objectives of further understanding changes in concentrations, identifying potential sources of the compound, and documenting data that will help the state develop a regulatory strategy.

The history of DuPont/Chemours is included in Ms. Holman's report.

DEQ started sampling the National Pollutant Discharge Elimination System (NPDES) outfall from Chemours into the Cape Fear River on June 19, 2017 and also sampled raw and finished water at public utilities up and downstream locations for six more weeks, ending on July 19, 2017. It was reported that the concentrations of GenX in finished water dropped significantly over the time period as the company had indicated they stopped the discharge of GenX into the wastewater stream in late June.

Based on information Chemours provided, on September 5, 2017 DEQ filed a 60-day notice of intent to suspend the NPDES permit. On behalf of DEQ, the Department of Justice (DOJ) filed a complaint against the company in Bladen County Superior Court. On September 8, 2017 the Court entered a partial consent order. Ms. Holman reported that Chemours is making progress toward addressing the requests in the 60-day letter and DEQ is continuing to work with the company on the situation. DEQ is continuing its study and work to remove 1,4-dioxane from North Carolina river basins; continuing to evaluate Chemours discharges and will continue coordination with the Department of Health and Human Services (DHHS), other states and federal agencies and industry on emerging contaminants.

Following Ms. Holman's presentation, Representative Iler asked for clarification of a few things including who the 1,4-dioxane is attributed to. There is no data to support it is coming from the site.

Representative Grange stated that she was concerned with the timeline of this and why there was no indication of monitoring earlier and asked what about testing and sampling at other large industrial sites?

Representative Dixon noted the presentation started with recent history and this is the first time this group of stuff has been identified as a potential problem. Things were going well and then something happened. These circumstances occurred with DEQ fully funded and capable. If the press makes it political, i.e. funding, he will not sit by idly.

Representative McElraft stated there was a permit in 2009 for C8 chemical. The document was a consent order reached with U.S. EPA to manufacture GenX instead of C8 but in a closed loop system. She asked if there is any testing done before discharge is initially approved. The response was that there are health standards and specific limits and monitoring requirements. Representative McElraft indicated her surprise that they don't know there is a discharge from Chemours.

Representative Stone said it is important to get benchmarks and asked if it was common to issue a Notice of Violation (NOV) for an unregulated compound.

It was explained that the NOV is used for a direct violation that affects the environment.

He also asked if it is a requirement to list the compounds by name of the constituent chemicals.

The response was that the question could not be answered because of litigation.

Representative Stone then asked if DEQ ever prohibited a zero discharge on wastewater. A further question was whether the treatment was consistent. Representative Stone asked if DEQ was looking at air quality as well. It is important to get to the bottom of this so the public knows what is going on.

Representative Harrison thought there was statutory authority to monitor and regulate effectively. She asked how many staff members are available to handle NPDES permits.

The response was that there are 9 full time employees (FTE's) for permitting but there is a 41% backlog and 220 major NPDES permits. There is also no real regulation of GenX in the Division of Air Quality; it is not qualified as air toxin and thus cannot be regulated. There is statutory authority to form safety thresholds but data and technical information is lacking to make decisions. There are plans to require reporting of emerging contaminants, and that is done for some, but they are looking to expand. The U.S. EPA set a health advisory in 2017 for levels of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS).

She asked about the backlog of permits and permits that have expired.

Ms. Holman said there was a backlog and the department would like more resources.

Representative Brisson commented on problems with Bladen and Cumberland County groundwater, but related to underground storage tanks (USTs). He noted that technology has made it possible to detect smaller concentrations and dozens of new chemicals.

The next item was presented by Mike Brown, Chairman of the Board of the Cape Fear Public Utility Authority (CFPUA), titled CFPUA Action Plan to Implement

Gen-X Response Measures (A**ttachment 4).** He stated that the CFPUA has been operational since 2008, has 68,000 customer accounts, and serves roughly 200,000 people with two plants; Sweeney and the smaller Richardson Nanofiltration Plant. They buy 23 million gallons from the Lower Cape Fear.

Mr. Frank Styers, Chief Operating Officer, also gave part of the Plan. He indicated that inflow has been in service since the 1940s. Granular activated carbon (GAC) pilot testing has shown to absorb compounds, but has a limited life. Ion-exchange resin testing has been specifically manufactured to remove PFOS with negatively charged compounds. Fourteen other compounds are being evaluated. GenX water was sent to Pittsburgh for accelerated column testing with results in October. So far, $90,000 has been spent with testing and monitoring. The overview of costs is included as a summary in the slide presentation in the attachment.

Mr. Styers stated that the CFPUA is partnering with the University of North Carolina Wilmington (UNCW) in developing tests to identify what is in the water. The study will also include where the compounds are, possibly the river sediment, and evaluate compounds in finished water; totaling $300,000. Aquifer storage and recovery (ASR) is not yet permitted and approved. The ASR program cost estimates are $600,000 including engineering, construction, testing and monitoring. The summary of anticipated short term costs is as follows: water treatment evaluation, $90,000; UNCW support, $300,000; ASR remediation, $600,000, and ongoing GenX monitoring, $85,000 for a total cost of $1,075,000. These costs do not include permanent upgrades to Sweeney.

Chairman Davis called for questions and comments from the Committee members.

Representative Stone asked Mr. Styers about testing for perfluoro-2-methoxyacetic acid (PFMOAA).

He responded that they are testing for all known compounds.

Representative McElraft asked if they were testing at the plant for 1,4-Dioxane.

He indicated that it was not currently being done but they have done it in the past and have a good removal percentage.

Representative Harrison noted 14 pro-fluorinated compounds and asked if there were others.

My Styers stated that one test covers the spectrum of all 14.

Representative Grange commended the CFPUA in addressing the issue and thought North Carolina might be a leader in the nation tackling the problem.

The third presentation on the agenda was an overview by Mark Lanier, Assistant to the Chancellor and Assistant Secretary of the Board of Trustees at UNCW. (**Attachment 5**) It would be conducted under contract with CFPUA to include the collection and analysis of sediments from the Cape Fear River from seven locations, ranging from Southport, in Brunswick County, to upstream of the Chemours facility, which is on the border of Bladen and Cumberland counties in order to have a better understanding of the concentration of various chemicals in the sediments; biodegradation studies of GenX in the sediments over the timeframe allowed; possible work at UNCW's Center for Marine Science regarding bioaccumulation in oysters or other organisms in the ecosystem; and possible work by others at UNCW in regard to potential impacts on humans and human behaviors, such as analysis of the use and effectiveness of home water filtration systems. He indicated the University would be providing the services outside of the dollars appropriated and the citizens of North Carolina would benefit from all of this research.

Mr. Lanier's remarks were followed by the UNCW Water Quality Research Plans (related to HB 56 Amend Environmental Laws/S.L. 2017-209) and given by Dr. Ralph Mead, Professor, Department of Chemistry and Biochemistry at UNCW. See **Attachment 6.** The research plans will work on the existing contract with CFPUA to analyze both raw and treated water with the purpose of providing its customers the highest quality water possible. The proposed work will be built upon previous published research at UNCW and will focus on the goals of establishing a method for the analysis of per- and polyfluoroalkyl substances (PFAS) in raw and finished drinking water using published methodology. When the University is confident in the analytical methodology, a sampling campaign of raw and finished drinking water will commence. They will also develop and implement the analysis of sediments, as in HB 56, conduct biodegradation studies in sediments, bioaccumulation in ecosystem and economic impacts and household filtration effectiveness and household risk perception. He shared that determining human toxicity requires high-resolution spectrometry and takes a great deal of time to identify unknowns. The C8 and GenX are completely different organic compounds with different molecular structure. This will be accomplished over a one-year time frame beginning September 1, 2017 and ending August 31, 2018.

Representative Stone stated that PFOA and GenX are different and are they being overly connected. These are the holes in the research in GenX because there is a good amount of research on C8.

Following Dr. Mead's presentation, the Committee recessed for a lunch break.

The Committee resumed with a presentation on the Health Effects of GenX and Related Compounds in the Lower Cape Fear River Basin. Mr. Mark Benton, Deputy Secretary for DHHS, Division of Public Health (DPH) stated there were three challenges in setting a health goal as follows; (1) is there research, (2) is it correct and (3) is the research readily available? He explained that not all of them are easily accessible to state agencies.

His remarks were followed by Zack Moore, MD, MPH, State Epidemiologist, DHHS, DPH (**Attachment 7).** The public health role is to determine the risk to human health, risk assessments, and health based guidance to interested parties. They don't solely rely on their own data and standards and it is not the norm to set State specific health goals. The level isn't safe versus dangerous but rather the level of exposure for 70 years to a bottle-fed infant. Some health information isn't available in the public domain (confidential business information), but DHHS has received it from Chemours. Potential health effects to humans are not well understood for PFAS; PFOA and PFOS do have some research (U.S. EPA set lifetime health advisory at less than 70 parts per trillion (ppt) in 2017) on liver, thyroid, pancreas and hormone issues. GenX, a replacement for PFOA was unintentionally produced as a by-product for decades. There are no known human effects yet. A European chemical agency has looked into GenX (no effect level) in a 2-year study in rats which is what was used for the 71,000 ppt initial threshold. The U.S. EPA suggested other health studies that give a better idea of human health effects and that is what led to the 100-fold decrease. It also changed the assumption that not all exposure would come from water and assumed that water would only be 20% of the exposure. Issues accurately quantifying exactly how much is in the water have no lab standards. Currently, DHHS is working with the Center for Disease Control (CDC) and the U.S. EPA for a long-term Public Health Assessment. The analyzed data on the NC Cancer Registry did not reveal any trends of concern.

Following the presentation, Chairman Davis asked how the effect on humans would be determined as humans differ from animals.

The response was that there is only animal data for GenX, and there is no information for PFMOAA and Nafion byproducts 1 and 2. Most of the DHHS work is on

drinking water from wells; they do not randomly test but evaluate after something has been found. The State only had one toxicologist and the position had been vacant for 6 months before the week of the Star News article on GenX.

Representative Iler asked who the Division was alerted by to start investigating. Was it local health departments or DEQ?

Dr. Moore responded that it was the Brunswick County Health Department on June 8, 2017 as a result of a newspaper article.

Representative McElraft asked what was the dose in which the European chemical agency found health effects.

Dr. Moore said 1mg/1kg was used as a starting point for a controlled laboratory study.

Representative Harrison asked if other states are working to provide guidance and set standards for PFOA and others.

New Jersey has a strong environmental toxicology program, but no standards. As to the question of whether PFOA is an endocrine disrupter, there is insufficient evidence to make that determination. The central question being sought with U.S. EPA involves research into the exposure of all together at the same time. Dr. Moore stated that his division does not have a regulatory role, but does with private drinking well inspection.

Representative Grange stated that citizens view health goals as health standards and what confidence does the public have in the health goal that was decreased greatly from the initial assessment. The ways that the levels are interpreted are not the way they are meant.

Representative Stone referred to a July 14, 2017 DHHS FAQ document which doesn't suggest whether 140 ppt is a safe level for drinking water.

Dr. Moore explained that a blanket statement for all levels cannot be made, but these levels are for a lifetime of exposure. West Virginia set a threshold of 17,000 ppt for discharges in waterways but this is not finished water for drinking. DHHS has no mechanism for peer review.

Representative McElraft then asked if any epidemiology studies were done because you can't just look at higher cancer rates and assume that GenX is the cause.

Dr. Moore responded that the studies need to be done correctly so DHHS does not do them; they are sent to academic partners.

Representative Dixon inquired about establishing health standards to see if parents are giving proper amounts of water to children. The assumption is critical to the overall conclusion. There is a gap between actuality and reality so it is important to see if news releases are accurate. Representative Dixon stated that the news outlets are unconcerned with reporting the news; only interested in producing the news.

Dr. Moore responded that he can't make a blanket statement. In further discussion, he added that the DHHS previously had two toxicologists; now has only one.

Representative McElraft inquired about the animal studies source.

Dr. Moore promised to get back to her with the source.

She added that it is necessary to be more certain before putting numbers out.

Representative Iler indicated that the budget for DHHS is over 5.253 million dollars. He also had some other budget figures.

Representative Dixon stated that political games are being played.

The next presentation was from Tracy Skrabal, Coastal Scientist and Manager of the Southeast Regional Office of the North Carolina Coastal Federation. (**Attachment 8).** She explained that her comments will focus on the issue of contaminants in our surface waters. She outlined the Federation's priorities for any legislative response to the GenX issue. The first one was that what happened in the Cape Fear River with GenX should never occur again in any North Carolina river or drinking water supply. To achieve this goal will require the development of a permanent, well-funded water monitoring program that allows regulator, local governments and the general public to have the information they need to be confident we know what is in our water and are taking the appropriate steps to ensure it is clean and safe.

Representative Davis asked if there are gaps in state and federal regulations that can be addressed by the state.

Ms. Skrabal responded that the existing regulations are sufficient but the gaps are in capabilities, technologies, research and infrastructure.

Representative Grange stated she identified a gap in the earlier U.S. EPA presentation. The consent order from 2009 did not apply to byproducts.

Representative Dixon commented that the burden of proof for what is discharged is up to the person applying for the permit. He asked if that was legally binding.

The response was that under a CWA degradation clause, it is. Ms. Culpepper informed the Committee that the burden lies with the permittee under the NPDES permit structure. The permit application indicates where the discharge is located. The points of compliance for the permit do not lie at the production line, but have been sampled during DEQ investigation.

Representative Dixon stated that there needs to be more vigorous tests at the discharge point. He further noted that this current majority has not been caught flat-footed.

Following other comments from Ms. Skrabal, which are included in **Attachment 8,** she introduced Dr. Lee Ferguson, Associate Professor, Department of Civil and Environmental Engineering at Duke University, to make his presentation to the committee. It is titled "Emerging Contaminants in NC Rivers: Strategies for Protecting Water Quality" (**Attachment 9).** Dr. Ferguson began by stating that the only way to avoid another GenX situation is "holistic emerging contaminant monitoring" but this is not routine and most state labs do not have the capability. A top-down method of prioritization of the chemicals means to know what chemicals are used in commerce and monitor for those in the waterways. Roughly 85,000 chemicals are used in commerce, roughly only 10,000 have been tested for toxicity. At 25,000 lbs. per year, companies must disclose to U.S. EPA, except there are some chemicals for which production volume is CBI. Those that are produced in such a large volume are the ones we want to know most about but much of it is protected by CBI.

The bottom-up prioritization is known-knowns, known-unknowns, and unknown-unknowns. Most of the instrumentation that is needed is in research labs but not in state or contract labs. Most companies don't have these either. The California state water-board monitoring system (non-targeted analysis) measures for specific non-regulated contaminants. How is it paid for? A regional monitoring program from a non-profit ($3.5 million) is paid from dischargers, permit fees, etc.

The Rhine River is an example of a water supply for 20 million people. Their monitoring system samples the water every day and assesses the compounds that are unregulated. The technology is very specific and very costly. Daily monitoring allows for immediate discovery.

Representative Dixon asked how long the Rhine monitoring system has been in place.

It has been there since the l980's after a large chemical spill.

Representative Grange asked if GenX is in the list of 97 targeted compounds.

It is not and had to be discovered in the Cape Fear River through non-targeting.

Representative McElraft wondered if the California advisory board detected GenX.

The response was "no" but PFOS has been on the discovery panel for about 10 years. C8 was found in relatively large levels, but pro-fluorinated compounds are very prevalent with airports, military bases, etc. The first sample in GenX was in 2015 in the Cape Fear River.

Representative Harrison asked if PFAS are on SDWA list.

The response was "no". She also asked if the number of chemicals will be updated with the newly passed TSCA reform.

The response was in the affirmative but a much larger burden of CBI protection; less will be protected (currently reviewed by U.S. EPA).

PFAS and PFOS bind to sediment and organisms in the environment so when the discharge stops, there isn't necessarily an immediate drop.

As the questions and answers ended, Chairman Davis requested that any questions be sent to the Committee Assistant, Judy Lowe.

The meeting was adjourned at 4:10 PM.

The next meeting of the Committee is scheduled for Thursday, October 26, 2017 and will begin at 9:30 AM.

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Representative Ted Davis, Jr., Sr. Chair,
Presiding

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Judy Lowe, Committee Clerk

Attachments:

1. Visitor Registrations Sheets
2. Regulatory History of the Chemours Fayetteville Works Facility-Sheila Holman
3. Written Remarks—Sheila Holman
4. CFPUA Action Plan to Implement GenX Response Measures—Mike Brown and Frank Styers
5. Action Plan to Implement Section 20 (a)(2) of House Bill 56—GenX Response Measure—Mark Lanier
6. UNCW Water Quality Research Plans—Dr. Ralph Reed
7. Health Effects of GenX and Related Compounds in the Lower Cape Fear River Basin—Mark Benton and Zack Moore, MD
8. North Carolina Coastal Federation Comments to House Select Committee on River Quality—Tracy Skrabal
9. Emerging Contaminants in NC Rivers: Strategies for Protecting Water Quality—P. Lee Ferguson, Ph.D.